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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/619,442	07/19/2000	Alberto Pique	N.C.79.834	1870
7590 04/23/2004			EXAMINER	
Amy Loch Rassing Associate Counsel (Patent) Code 1008.2 Naval Research Laboratory Washington, DC 20375-5000			FULLER, ERIC B	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 04/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/619,442	PIQUE ET AL.	
	Examiner	Art Unit	
	Eric B Fuller	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-26 and 29-34 is/are pending in the application.
- 4a) Of the above claim(s) 20-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-19, 26 and 29-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Terminal Disclaimer

The terminal disclaimer filed on January 27, 2004 disclaiming the terminal portion of any patent granted on this application that would extend beyond the expiration date of US Patent 6,177,151 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-19 and 26, 30, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bills et al. (US 5,308,737) in view of Palazzotto et al. (US 5,376,428).

Bills teaches a laser deposition method. A laser-transparent polymeric ribbon is used as the target substrate for backside radiation (column 3, lines 10-15), this reads on the applicant's configuration of the receiving substrate and target substrate. The deposited coating may be a dye and the material may be transferred in an uncured state, such as a monomer or oligomer (column 10, lines 22-42). The reference is silent on using a laser to cure the material.

Palazzotto teaches that it is known to cure polyurethane precursors and monomers by a laser (column 15, lines 21-40). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use a laser to cure the deposited material in Bills by a laser, as taught by Palazzotto. By doing so, one would have a reasonable expectation of success, as Bills is silent to the means of curing and Palazzotto teaches a means of curing similar materials.

As to claims 18 and 19, Bills teaches the transfer material additionally comprising metals and curing agents (column 10, lines 1-21). The reference is silent to what the curing agent is. However, Palazzotto teaches that organometallic compounds are used as curing agents (abstract; column 16, lines 40-45). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize organometallic compounds in the process taught by Bills. By doing so, one would have a reasonable expectation of success, as Bills teaches to use curing agents and Palazzotto teaches that organometallic compounds are useful as curing agents.

As to newly added claims 30 and 32, at least one or more monolayers of the gas-producing material are vaporized.

Claims 29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bills et al. (US 5,308,737) in view of Palazzotto et al. (US 5,376,428), as applied to claims 15 and 26 above, and further in view of Vorst et al. (US 4,401,992)

Bills, in view of Palazzotto, teaches the limitations of claims 15 and 26 above, but fails to explicitly teach the second laser decomposing the deposited material. However,

Vorst teaches that decomposing dyes by laser allows for contrasting color changes. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use a laser to decompose the deposited dyes taught by Bills. By doing so, one would reap the benefits of contrasted color changes.

Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bills et al. (US 5,308,737) in view of Palazzotto et al. (US 5,376,428), as applied to claims 15 and 26 above, and further in view of Mayer (US 6,159,832).

Bills, in view of Palazzotto, teaches the limitations of claims 15 and 26 above, but fails to explicitly teach a gap between the target and substrate. However, Mayer teaches ways in which the precision of the process may be increased such that the target is not required to be in intimate contact with the substrate (column 7, lines 62-65). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use such precision increasing steps (ultrafast laser, etc.) such that a small gap between the target and substrate may exist in the process taught by Bills. By doing so, precision may be achieved without risking contamination of the substrate.

Response to Arguments

Applicant argues that Bills fails to teach that the source material is deposited on the substrate. It appears that the applicant is arguing that the claims require that the source material removed from the transparent target and the material deposited on the

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substrate are structurally the same (no cross-linking or decomposition occurs during transfer). This argument has not been found convincing. It is the position of the examiner that the specification provides a clear difference in terminology between "source material" and "material of interest" on page 9, line 18, though page 10, line 6, of the specification. However, the claims do not require that the "source material" does not incur any changes in transfer, only that a transformation occurs after deposition (such as additional transformation or completing transformation). Bills teaches that the material removed from the target is the material deposited. This reads on depositing the source material. In addition, independent claim 26 does not require multiple lasers nor a gap in between the target and the substrate. Thus, a single laser performing the transfer and transformation simultaneously would still read on the applicant's claim. However, this does not appear to be in commensurate with what the applicant has argued.

Applicant argues that the material of Bills would likely cure during transfer. This is not found convincing. As noted above, the claims do not require that the source material remain uncured during transfer, only that the chemical properties of the deposited material be altered. Thus, the arguments are not commensurate with the scope of the claims. Regardless, since Bills teaches to transfer the materials in an uncured state and the laser is used to vaporize a donor material in order to propel the uncured material towards the substrate (thus limiting interaction of the laser with the transfer material), this reads on the deposited material being uncured. The secondary

reference teaches to cure the deposited material by laser, which reads on the applicant's claims.

Applicant argues that there is a black radiation-absorbing layer coated on the substrate, thus the substrate is not transparent. This is not found convincing. The claims do not require that the source material be coated "on to" the transparent substrate or "adjacent" the substrate. The claims are open to layers in between. Bills explicitly teaches a transparent substrate with a radiation-absorbing layer. This is sufficient to read on the applicant's claims.

Applicant argues that if the transfer method of Bills was used with the polymerizable composition of Palazzotto, then the composition would be polymerized during transfer and thus a step of polymerizing the deposited material would not be required. This is not found convincing. The examiner suggests using the process of Palazzotto (laser curing) to cure the uncured monomers that are deposited in Bills (Bills in view of Palazzotto), not to use the use the material of Palazzotto in the process of Bills (which would be Palazzotto in view of Bills). One skilled in the art, through routine experimentation, would be able to determine the laser power required to perform such a method.

Applicant argues that there is no motivation to use the curing agents of Palazzotto in the process of Bills. Applicant argues that Palazzotto teaches using the curing agents for curing monomers and that Bills teaches a monomer, thus there is no motivation to combine a metal powder with a curing agent. This argument is not found convincing. As applicant has admitted, Bills teaches a monomer. Bills also teaches an

additional constituent of metal powder. It would have been obvious to use the curing agent of Palazzotto to assist in curing the monomer of Bills. The use of all three materials reads on the applicant's claims.

Applicant's arguments in view of newly added claims 39, 30, 33 and 34 are moot in view of the new grounds of rejection.

Applicant argues that Bills does not disclose vaporizing one or more monolayers adjacent the substrate. This is not found convincing. The claims do not require that the vaporized material is the "source material". Thus the separate gas-producing layer being vaporized is sufficient for reading on the applicant's claims.

Applicant's filing of the terminal disclaimer overcomes the double patenting rejection made in the last Detailed Action. Examiner has withdrawn these rejections accordingly.

Conclusion

Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

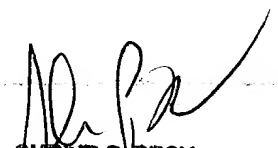
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B Fuller whose telephone number is (571) 272-1420. The examiner can normally be reached on Mondays through Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck, can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



EBF



SHRIVE P. BECK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700